Amendments to the Claims (this listing replaces all prior versions):

1. (Original) A router using a distributed implementation of a routing control protocol to route a packet between a plurality of computer networks, comprising:

a control-plane having a control-plane processor to implement a central control portion of the control protocol;

a plurality of forwarding-planes, each having a forwarding-plane processor to implement an offload control portion of the control protocol and a plurality of ports to connect the router to the computer networks; and

a back-plane to connect the control plane to the plurality of forwarding-planes and to enable processing of the packet based on an implementation of the control protocol by the control-plane and the forwarding-plane.

2. (Original) The router of claim 1, wherein the offload control portion of the control protocol generates an outgoing control message.

3. (Original) The router of claim 2, wherein the control protocol is OPEN SHORTEST PATH FIRST protocol and the outgoing control message is a HELLO message.

4. (Original) The router of claim 2, wherein the control protocol is RESOURCE RESERVATION protocol and the outgoing control message is a PATH message.

5. (Original) The router of claim 2, wherein the control protocol is INTRA-DOMAIN INTERMEDIATE SYSTEM TO INTERMEDIATE SYSTEM ROUTING PROTOCOL and the outgoing control message is a HELLO message.

6. (Original) The router of claim 1, wherein the offload control portion of the control protocol responds to an incoming request to the control protocol.

7. (Original) The router of claim 6, wherein the control protocol is OPEN SHORTEST PATH FIRST and the incoming request is a link status request.

8. (Original) The router of claim 6, wherein the control protocol is RESOURCE RESERVATION and the incoming request is a RESV request.

9. (Original) The router of claim 6, wherein the control protocol is INTRA-DOMAIN INTERMEDIATE SYSTEM TO INTERMEDIATE SYSTEM ROUTING PROTOCOL and the incoming request is a HELLO request.

10. (Original) The router of claim 1, wherein the control-plane and the forwarding-plane together implement a plurality of control protocols.

11. (Original) The router of claim 10, wherein the plurality of control protocols include OPEN SHORTEST PATH FIRST and RESOURCE RESERVATION.

12. (Original) The router of claim 1, wherein the plurality of ports include a plurality of virtual interfaces on a physical interface.

13. (Original) The router of claim 1, wherein the forwarding-plane processor includes:

a processing engine to implement a plurality of packet processing functions for routing the packet; and

a general purpose processor to implement the offload control portion of the control protocol.

14. (Original) The router of claim 1, wherein the off-load control portion of the control protocol operates to reduce a control flow load on the back-plane between the control-plane and the forwarding plane.

15. (Original) The router of claim 1, wherein the off-load control portion of the control protocol operates to reduce a processing load on the control-plane processor.

16. (Original) A method of processing a packet between two or more computer networks using a distributed implementation of a control protocol, comprising:

implementing a central control portion of a control protocol in a control-plane of a router and an offload control portion of the control protocol in a forwarding-plane of the router, the control-plane and forwarding plane being connected to each other by a back-plane; and

processing the packet based on an implementation of the control protocol by the control-plane and the forwarding-plane.

17. (Original) The method of claim 16, wherein the offload control portion of the control protocol generates an outgoing control message.

18. (Original) The method of claim 17, wherein the control protocol is OPEN SHORTEST PATH FIRST protocol and the outgoing control message is a HELLO message.

19. (Original) The method of claim 17, wherein the control protocol is RESOURCE RESERVATION protocol and the outgoing control message is a PATH message.

20. (Original) The method of claim 16, wherein the offload control portion of the control protocol responds to an incoming request to the control protocol.

21. (Original) The method of claim 20, wherein the control protocol is OPEN SHORTEST PATH FIRST and the incoming request is a LSA request.

22. (Original) The method of claim 20, wherein the control protocol is RESOURCE RESERVATION and the incoming request is a RESV request.

23. (Original) The method of claim 16, wherein the control-plane and the forwarding-plane implement a plurality of control protocols.

24. (Original) The method of claim 23, wherein the plurality of control protocols include OPEN SHORTEST PATH FIRST and RESOURCE RESERVATION.

25. (Original) The method of claim 16, further comprising, separating the control protocol into the central control portion and the off-load control portion to reduce a control flow load on the back-plane between the control-plane and the forwarding plane.

26. (Original) The method of claim 16, wherein the off-load control portion of the control protocol operates to reduce a processing load on the control-plane processor.

27. (Original) An article comprising a computer-readable medium that stores instructions for use by a router in processing a packet, the instructions for causing the router to:

implement a central control portion of a control protocol in a control-plane of the router and an offload control portion of the control protocol in a forwarding-plane of the router, the control-plane and forwarding plane being connected to each other by a back-plane; and

process the packet based on an implementation of the control protocol by the control-plane and the forwarding-plane.

28. (Original) The article in claim 27, wherein the offload control portion of the control protocol comprises instructions to control a generation of an outgoing control message.

29. (Original) The article in claim 27, wherein the offload control portion of the control protocol comprises instructions to control a response to an incoming request in the control protocol.

30. (Original) The article in claim 27, further comprising instructions to:

implement a plurality of packet processing functions at a processing engine in the forwarding-plane; and

implement the offload control portion of the control protocol at a general-purpose processor in the forwarding-plane.

31. (Previously Presented) A router using a distributed implementation of a routing control protocol to route a packet, comprising:

a control-plane having a control-plane processor to implement a first control portion of the control protocol;

a plurality of forwarding-planes, each having a forwarding-plane processor to implement a second control portion of the control protocol; and

a back-plane to connect the control plane to the plurality of forwarding-planes and to enable processing of the packet based on an implementation of the control protocol by the control-plane and the forwarding-plane.

32. (Previously Presented) The router of claim 31, wherein the second control portion of the control protocol generates an outgoing control message.

33. (Previously Presented) The router of claim 31, wherein the second control portion of the control protocol responds to an incoming request to the control protocol.

34. (Previously Presented) The router of claim 31, wherein the control-plane and the forwarding-planes together implement a plurality of control protocols.

35. (Previously Presented) The router of claim 31, wherein the forwarding-planes comprise a plurality of ports including a plurality of virtual interfaces on a physical interface.

36. (Previously Presented) The router of claim 31, wherein the forwarding-plane processor includes:

a processing engine to implement a plurality of packet processing functions for routing the packet; and

a general purpose processor to implement the second control portion of the control protocol.

37. (Previously Presented) The router of claim 31, wherein the second control portion of the control protocol operates to reduce a control flow load on the back-plane between the control-plane and the forwarding plane.

38. (Previously Presented) The router of claim 31, wherein the second control portion of the control protocol operates to reduce a processing load on the control-plane processor.

39. (Previously Presented) A control-plane for a router using a distributed implementation of a routing control protocol to route a packet, comprising:

a control-plane processor to implement a first control portion of the control protocol and interact with a plurality of forwarding-planes, which implement a second control portion of the control protocol, to enable processing of the packet by the router.

40. (Previously Presented) The control-plane of claim 39, wherein the control-plane implements a plurality of control protocols.

41. (Previously Presented) A forwarding-plane for a router using a distributed implementation of a routing control protocol to route a packet, comprising:

a forwarding-plane processor to implement an offload control portion of the control protocol and interact with a control-plane, which implements a central control portion of the control protocol, to enable processing of the packet by the router.

42. (Previously Presented) The forwarding-plane of claim 41, wherein the offload control portion of the control protocol generates an outgoing control message.

43. (Previously Presented) The forwarding-plane of claim 41, wherein the offload control portion of the control protocol responds to an incoming request to the control protocol.

44. (Previously Presented) The forwarding-plane of claim 41, wherein the forwarding-plane comprises a plurality of ports including a plurality of virtual interfaces on a physical interface.

45. (Previously Presented) The forwarding-plane of claim 41, wherein the forwarding-plane processor includes:

a processing engine to implement a plurality of packet processing functions for routing the packet; and

a general purpose processor to implement the offload control portion of the control protocol.

46. (Previously Presented) The forwarding-plane of claim 41, wherein the offload control portion of the control protocol operates to reduce a processing load on a control-plane processor.

47. (Previously Presented) A control-plane processor for a router using a distributed implementation of a routing control protocol to route a packet, the control-plane processor comprising instructions to implement:

a first control portion of the control protocol and interact with a plurality of forwarding-planes, which implement a second control portion of the control protocol, to enable processing of the packet by the router.

48. (Previously Presented) The control-plane processor of claim 47, wherein the control-plane processor includes instructions to implement a plurality of control protocols.

49. (Previously Presented) A forwarding-plane processor for a router using a distributed implementation of a routing control protocol to route a packet, the forwarding-plane processor comprising instructions to implement:

an offload control portion of the control protocol and interact with a control-plane, which implements a central control portion of the control protocol, to enable processing of the packet by the router.

50. (Previously Presented) The forwarding-plane processor of claim 49, wherein the offload control portion of the control protocol generates an outgoing control message.

51. (Previously Presented) The forwarding-plane processor of claim 49, wherein the offload control portion of the control protocol responds to an incoming request to the control protocol.

52. (Previously Presented) The forwarding-plane processor of claim 49, comprising:

a processing engine to implement a plurality of packet processing functions for routing the packet; and

a general purpose processor to implement the offload control portion of the control protocol.

53. (Previously Presented) The forwarding-plane processor of claim 49, wherein the offload control portion of the control protocol operates to reduce a processing load on a control-plane processor.